Amendments to the Specification:

After the title of the invention on page 1, please insert at the left margin the heading --Technical Field--.

After line 16 on page 2, please at the left margin insert the heading --Background--.

Please replace the paragraph on page 3, lines 6-24with the following amended paragraph:

Fig. 1 shows schematically and simplified a typical polishing apparatus as applied for CMP. A turntable 1 is rotatably driven by a motor drive and with a predetermined drive characteristics, as with a controlled rotational speed Ω, around an axis A_1. It carries on its surface a polishing pad 3. A transmission shaft 5 with an axis A_5 parallel to axis A_1 is, in the embodiment of fig. 1, arranged eccentrically with respect to the axis A_1. Transmission shaft 5 is mounted to a substrate carrier 7 carrying a substrate 9 to be polished. In the example embodiment the substrate 9 is semiconductor wafer. The transmission shaft 5 and thus substrate 9 is rotated about axis A_5 with a predetermined controlled drive from a drive motor (not shown), e.g. at a controlled rotational speed ω. Between polishing ~~tab~~ pad 3 and ~~waver~~ wafer 9 there is applied a predetermined controlled force F. For CMP and as schematically shown in fig. 1 and well known in this art a slurry 11 is dispatched to the surface of the polishing pad 3. For some applications axis A_5 is additionally moved toward and from axis A_1 in a controller manner.

Please replace the paragraph on page 6, at lines 13-22 with the following amended paragraph:

According to the prior art documents mentioned, torque is monitored by monitoring the current of an electric motor loaded by such torque. Monitoring such motor current is of limited accuracy, especially when materials ~~changing of~~ exhibiting low friction changes as e.g. ~~Tungsten~~ tungsten or ~~Titanium Nitride~~ titanium nitride are to be polished~~, more~~. More generically, monitoring is of limited accuracy where there are only small frictional changes during the polishing process. Additionally, accuracy of this approach is significantly affected by the fact that small changes or large signals have to be monitored, which leads to significant ~~Signal~~ signal to ~~Noise~~ noise problems.

Please replace the paragraph beginning on page 6, line 28 and continuing to page 7, line 9, with the following amended paragraph:

Under this aspect there is known from the US 6 213 846 to monitor the angle of torsion along a predetermine axial extent of such shaft due ~~by~~ to the torque loading. Without teaching how to realize it, it is proposed to directly mount on or in the shaft a sensor detecting such deformation. More explicitly this document teaches to apply coaxial rings of reflective portions spaced in axial direction at the outer surface of the shaft and to measure the torque-dependent different of angle of torsion at the respective axially spaced loci by monitoring phase different of laser beam reflection at the portions of the rings.

After line 12 on page 7, at the left margin, please insert the heading --Summary of the Invention--.

Please replace the paragraph on page 9, at line 14 and continuing to page 10, line 8 with the following amended paragraph:

In spite of the fact that, generically, the manufacturing method according to the present invention may be applied for monitoring polishing or, more generically, a material removal progress, as long as such progress varies the torque loading the transmission shaft, in a most preferred embodiment the method according to the present invention is applied where the substrate has at least one material interface between two different materials and substantially parallel to the surface of the substrate, whereby by monitoring the addressed deformation, i.e. angle of torsion, one monitors when material removing reaches such interface. Thus, a more generalized "endpoint" detection is realized. Reaching the interface is detected as endpoint of removing the first material and as an indication as to where the removal process stands. With this information removing is controlled dependent on the application of the polishing process. Removing may e.g. go on, e.g. transiting from a situation according to fig. 2B that of fig. 2C after having detected that $I_{1,2}$ has been reached. Possibly the removal process parameters are varied after $I_{1,2}$ has been reached, e.g. relative movement, slurry composition and flow-rate in ~~CMC~~ CMP processing etc. Nevertheless, in a preferred embodiment when reaching a material interface is detected the removal process is disabled.

Please replace the paragraph on page 12, at lines 10-20 with the following amended paragraph:

In view of the fact that the addressed and inventively applied transducer shaft section has a significantly shorter axial extent than the transmission shaft and that the transmission shaft and the transducer shaft section are loaded by the same axial force F as in fig. 1_1 the transducer ~~sections~~ section is conceived for high torque to torsion angle resolution. Bending of this section due to axial force may be neglected. In a most preferred embodiment the transducer section has an outer diameter which is smaller than the outer diameter of the transmission shaft, thereby improving the addressed resolution.

Please replace the paragraph on page 12, line 28 to page 13, line 12 with the following amended paragraph:

A torque transducer module especially suited for realizing the method of manufacturing according to the present invention comprises a body which extends along a central axis and which has two end portions. Each of the end portions is a part of an axial mount for a respective part to be axially mounted thereto. The module further comprises a strain gage sensor arrangement with at least one electric output. The module allows flexible ~~mount~~ mounting to one end face of the transmission shaft as was described, the other end portion of the module being mounted to a substrate carrier or possibly a polishing table. Alternatively, the transducer module according to the present invention is mounted on both sides to respective parts of the transmission shaft.

Please replace the paragraph on page 13, lines 20-22 with the following amended paragraph:

Preferred embodiments of the torque transducer module ~~according to the present invention are further claimed in the claims 17 to 23~~comprise at least one recess along the body between the two end portions thereof, the sensor arrangement being mounted within the recess. The body is cylindrical with respect to the central axis. The two end portions are substantially cylindrical rims projecting from the body. The end portions and the body form a cylindrical part substantially of I-shape in an axial cross-section with a reduced diameter cylindrical recess. The strain gage sensor arrangement is mounted within a recess in the outer surface of the body. A removable cover is provided for the recess.

The module further comprises an analogue to digital converter arrangement with an input operationally connected to the at least one electrical output of the strain gage sensor arrangement. Electrical leads, which are at least one of power supply leads for the sensor arrangement and signal transmission leads operationally connected to the electric output of the sensor arrangement, are located in an axially extending hollow space of the module which is open at at least one of the end portions thereof.

Please replace the paragraph on page 14, lines 4-11 with the following amended paragraph:

At the apparatus according to the present invention the transmission shaft and at least a part of the body of the torque transducer module are hollow. Electrical leads are provided in and along the hollow shaft and the

hollow body and are operationally connected to the sensor arrangement. Further preferred embodiments of the polishing apparatus ~~according to the present invention are specified in dependent claims 25 to 27~~comprise a slip-ring contact arrangement between the transmission shaft and a part of the apparatus stationary with respect to the rotatable transmission shaft. The electrical leads are operationally connected to the slip-ring contact arrangement. Preferably, at least one of the leads is operationally connected to at least two independent slip-ring contact arrangements for redundant signal transmission between the shaft and the part.

Please replace the paragraph on page 14, lines 21-24, with the following amended paragraph:

The present invention under the aspects of method for manufacturing, torque transducer module and polishing apparatus is additionally exemplified in the following description with the help of further figures 3-7 as discussed below.

Please replace the paragraph on page 14, at line 25 with the following heading at the left margin and paragraphs following the heading::

~~The further figures show by way of examples:~~

Brief Description of the Drawings

Fig. 1 shows schematically and simplified a typical polishing apparatus as applied for chemical mechanical polishing (CMP);

Fig. 2A shows a typical application for CMP;

Fig. 2B shows the application of Fig. 2A where polishing has removed material to reach interface $I_{1,2}$;

Fig. 2C shows the application of Figs. 2A and 2B where material has been removed to reach interface I_{IS};

Please replace the paragraph on page 14, lines 26-28 with the following amended paragraph:

Fig. 3 simplified and schematically, illustrates the principal of the present invention, exemplified at a torque transmission shaft arrangement for polishing;

Please replace the paragraph on page 15, lines 1-5 with the following amended paragraph:

Fig. 4 ~~by means of~~ is a simplified signal flow/functional block diagram incorporating a part of the shaft arrangement of the embodiment according to fig. 3, signal sensing and exploitation according to the present invention;

Please replace the paragraph on page 15, lines 6-9 with the following amended paragraph:

Fig. 5 ~~still in~~ is a simplified and schematic representation, a cross-sectional view of a transducer module according to the present invention, mounted to an apparatus according to the present invention, thereby providing for manufacturing of workpieces according to the invention or to load monitoring according to the invention;

Please replace the paragraph on page 15, lines 14-21 with the following amended paragraph:

Fig. 6 ~~in~~ is a simplified schematic representation in analogy to that of fig. 5, showing a further preferred embodiment of a transducer module according to the present invention to be mounted to an apparatus according to the present invention, thereby providing for manufacturing of workpieces according to the present invention or to load monitoring according to the invention~~,~~; and

Please replace the paragraph on page 15, lines 22-25 with the following amended paragraph:

Fig. 7 depicts over the time axis torque and torque derivative as measured with a transducer module according to the present invention as indicative for reaching subsequently two material interfaces.

After line 25 on page 15, please insert at the left margin the heading: Detailed Description of Embodiments.

Please add the Abstract of the Disclosure set forth on the separate sheet filed herewith to the application specification.